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SUBJECT: Application for amend to License DPR-31, revising TS re
 moveable incore detector thimbles for Cycle 13. Westinghouse
 nonproprietary & proprietary versions of thimble deletion
 evaluation encl. Proprietary version withheld.

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FPL

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APR 13 1993

L-93-095
10 CFR 2.790
10 CFR 50.36
10 CFR 50.90

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Gentlemen:

Re: Turkey Point Unit 3
Docket No. 50-250
Proposed License Amendment
Unit 3 Cycle 13 Moveable Incore Detector Thimbles

In accordance with 10 CFR 50.90, Florida Power and Light Company (FPL) requests that Appendix A of Facility Operating Licenses DPR-31 be amended to modify Turkey Point Unit 3 Technical Specification (T.S.) 3.3.3.2, Moveable Incore Detectors; T. S. 3/4.2.2, Heat Flux Hot Channel Factor - $F_0(Z)$ and T. S. 3/4.2.3, Nuclear Enthalpy Rise Hot Channel Factor and their associated bases. The proposed amendment is a change for Turkey Point Unit 3 Cycle 13 to reduce from 38 to a minimum of 25 the number of available moveable incore detector thimbles required for the Moveable Incore Detection System to be operable. This change would allow continued operation of Unit 3 should the current number of operable detector thimbles decrease.

As discussed with the staff on April 1, 1993, FPL proposes a one-time only change for Turkey Point Unit 3 Cycle 13 to reduce from 38 to a minimum of 25 the required number of available moveable incore detector thimbles. At this time, it is believed that the problem with sticking detector thimbles is caused by debris (i.e., corrosion products) trapped in the incore detector thimble tubes. In an effort to improve the performance of the Moveable Incore Detector system, FPL has replaced several flux map detectors, the dehumidifier in four of the five flux map drives and restored the nitrogen purge. Efforts are continuing to improve the performance of the moveable incore detector system. FPL is developing plans for extensive cleaning of the detector thimbles during the next scheduled refueling outage (currently scheduled to begin March 20, 1994). During the last several months more thimbles have become inoperable such that currently, fewer number of thimbles required for system operability are available. Failure to maintain the required minimum number of thimbles operable would result in a forced unit shutdown. Accordingly, this proposed license amendment is being submitted.

Attachment 1 provides the safety analysis for the amendment request. Included in Attachment 1 are: (a) figures depicting measured versus predicted peaking factors (F_0 and F_{AH}) for Unit 3 Cycle 13, and (b) a table summarizing the operating conditions and peaking factors for the most recent Unit 3 flux maps.

FPL has determined that the proposed license amendment does not involve a significant hazard pursuant to 10 CFR 50.92. The no significant hazards determination in support of the proposed Technical Specification change is provided in Attachment 2.

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an FPL Group company

Change: NRC PDR
NSIC

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Attachment 3 provides the proposed revised Technical Specification changes. Note that although the changes apply only to Unit 3 and there are no changes to the Unit 4 Technical Specifications, the Unit 4 Technical Specifications are administratively affected since they are combined into one specification applying to both Turkey Point Units 3 and 4.

Attachment 4 contains a proprietary version of the Westinghouse thimble deletion evaluation. Accordingly, FPL requests that the information which is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR 2.790 of the Commission's regulations.

In accordance with 10 CFR 50.91 (b) (1), a copy of the proposed license amendment is being forwarded to the State Designee for the State of Florida.

The proposed amendment has been reviewed by the Turkey Point Plant Nuclear Safety Committee and the FPL Company Nuclear Review Board.

FPL requests that review and approval of this proposed amendment be expedited in view of the recent history regarding availability of detector thimbles during Unit 3 Cycle 13 and the need for the use of the Moveable Incore Detection System for Technical Specification required monitoring/calibration functions in the near future. The inability to use the incore instrumentation system for these functions would result in a forced unit shutdown. The next Technical Specification required use of the system is May 10, 1993.

Should there be any questions on this request, please contact us.

Very truly yours,



T. F. Plunkett
Vice President
Turkey Point Nuclear Plant

TFP/RJT/rt

Attachments

cc: S. D. Ebnetter, Regional Administrator, Region II, USNRC
R. C. Butcher, Senior Resident Inspector, USNRC, Turkey Point
W. A. Passetti, Florida Department of Health and Rehabilitative
Services (w/o Attachment 4)

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SECRET

STATE OF FLORIDA)
) ss.
COUNTY OF DADE)

T. F. Plunkett being first duly sworn, deposes and says:

That he is Vice President, Turkey Point Nuclear Plant, of Florida Power and Light Company, the Licensee herein;

That he has executed the foregoing document; that the statements made in this document are true and correct to the best of his knowledge, information and belief, and that he is authorized to execute the document on behalf of said Licensee.

T F Plunkett
T. F. Plunkett

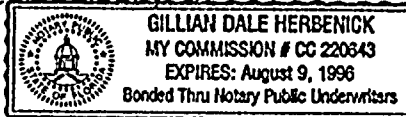
Subscribed and sworn to before me this

12th day of April, 1993.

Gillian Dale Herbenick

Name of Notary Public (Type or Print)

NOTARY PUBLIC, in and for the County of
Dade, State of Florida



My Commission expires _____
Commission No. _____

T. F. Plunkett is personally known to me.

RECEIVED
JAN 10 1964
U.S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C.

Appendix A

Westinghouse Authorization Letter CAW-93-446

Affidavit

Proprietary Information Letter

Copyright Notice

ATTACHMENT 1

SAFETY ANALYSIS

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Safety Analysis

Description of Proposed Change

The Turkey Point Units 3 and 4 Movable Incore Detector System (MIDS) contains a total of 50 instrumentation thimbles in the core. Technical Specification 3.3.3.2 requires that at least 38 detector thimbles be operable with a minimum of two detector thimbles per quadrant when used for monitoring FAH, Fq and Fxy. Due to the increase of incore detector thimble failures at Turkey Point Unit 3, Florida Power and Light Company requests a reduction in the required number of operable detector thimbles for the remainder of Cycle 13.

The proposed change will allow plant operation with the number of operable detector thimbles reduced to a minimum of 50% and will require a minimum of three detector thimbles per quadrant. To compensate for any increased uncertainty as the number of allowable operable detector thimbles is reduced, the measurement uncertainty for FAH and Fq will be increased linearly from 4% and 5% to 6% and 9%, respectively, whenever the number of operable detector thimbles is between 38 and 25. Also, the minimum number of detector thimbles per quadrant will be increased from two to three whenever the number of operable thimbles is less than 38.

Basis for Proposed Change

The main purpose of the incore detector system is to monitor the peaking factors (FAH and Fq) to verify that plant operation remains bounded by the limiting values in the Safety Analyses. Attachment 4 provides analyses of the peaking factor uncertainties with a reduced number of operable detector thimbles. The analyses show that, conservatively, measurement uncertainties on FAH of 5.0% and on Fq of 7.0% are sufficient to ensure that the peaking factors assumed in the Safety Analyses remain bounded with 50% (25) of operable detector thimbles. This is compared to the uncertainties on FAH of 4.0% and on Fq of 5.0% that are used in the current analyses (an increase in uncertainty of 1% and 2% for FAH and Fq, respectively). For additional conservatism, the increase uncertainty compensating factors are doubled yielding a total uncertainty of 6% and 9% for FAH and Fq, respectively, whenever the number of detector thimbles is 25. The uncertainty is linearly reduced as the number of operable detector thimbles increases from 50% (25) to 75% (38) thimbles.

The decrease in the allowable number of operable incore detectors is compensated by an increase in measurement uncertainty. This increase in measurement uncertainty ensures that peaking factor measurements using the incore detector system are conservatively

calculated.

During Unit 3 Cycle 13, the measured peaking factors have predicted well with deviations of less than 5% between measured and predicted. Figures 1 and 2 present the measured and predicted FAH and Fq, respectively. Table 1 presents a summary of the full power flux maps results for the current cycle. This provides assurance that the core is following the predicted behavior. Furthermore, Cycle 13 was designed with at least 8.0% margin to the Fq and FAH limits. While Fxy is referenced in T.S. 3.3.3.2, Turkey Point Units 3 & 4 Technical Specifications do not required Fxy surveillance and as a result no increase in measurement uncertainty on Fxy is proposed.

The increase in the number of thimbles per quadrant from two to three is to ensure that the deletion patterns are random. If less than three thimbles are left in any quadrant, then thimbles inoperability may not be a random process and the peaking factor uncertainties calculated previously will no longer apply.

Other Considerations

Currently, FPL is in the process of developing a Proposed License Amendment (PLA) to change the Axial Flux Difference (AFD) methodology from Constant Axial Offset Control (CAOC) to Relaxed Axial Offset Control (RAOC). In the RAOC PLA, there is some Fq analytical margin that will be used. FPL has determined that the available margin with the use of RAOC after 6,000 Megawatt-days/Metric Ton Uranium (MWD/MTU) in Unit 3 Cycle 13 is sufficient to accommodate the increase in Fq uncertainty (4%) due to the reduction of detector thimbles. As of March 26, 1993, the Unit 3 Cycle 13 exposure is approximately 3,000 MWD/MTU.

Safety Analysis Review

The limiting peaking factors used in the Turkey Point Updated Final Safety Analysis Report (UFSAR) Chapter 14 have not changed. Thus reanalysis of any of the events specified in the UFSAR is not required. A slight increase in the measurement uncertainty is needed to ensure that the actual peaking factors are conservatively bounded by the "measured" peaking factors.



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TABLE 1

Turkey Point Unit 3 Cycle 13 Flux Map Data

Map Number	Reactor Power (%)	Cycle Exposure (MWD/MTU)	Control Rod Position (steps)	Maximum Fq	Maximum FΔH	Minimum Fq Margin (%)	Minimum FΔH Margin (%)	Axial Offset (%)
4	99.9	600	223	1.9462	1.5398	5.37	4.95	4.211
5	99.9	1326	228	1.9470	1.5643	11.28	3.44	3.394
6	99.9	2118	228	1.9237	1.5325	17.17	5.40	1.551
7	99.7	2900	228	1.8491	1.5259	18.92	5.81	0.485

Note: (1) Axial Offset = $\frac{P_T - P_B}{P_T + P_B}$

where P_T is the power in the top of the core, and
 P_B is the power in the bottom of the core.

(2) The Minimum Fq and FΔH Margin is defined as the margin to the Technical Specification limit as follows:

$(1 - \text{Measured Peaking Factor/Peaking Factor Limit}) * 100$

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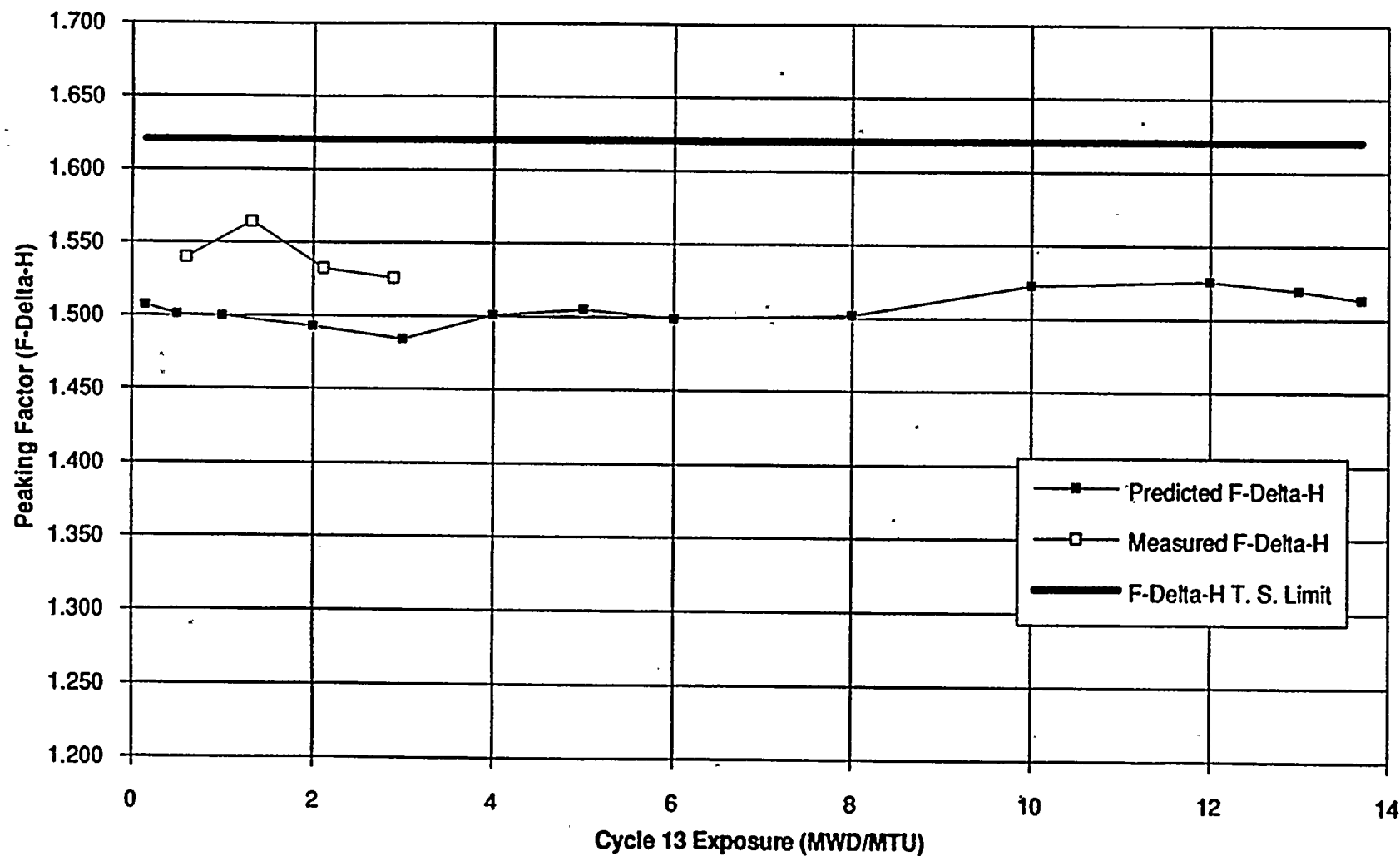
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FIGURE 2.1

Unit 3 Cycle 13 F-Delta-H (Including uncertainty)





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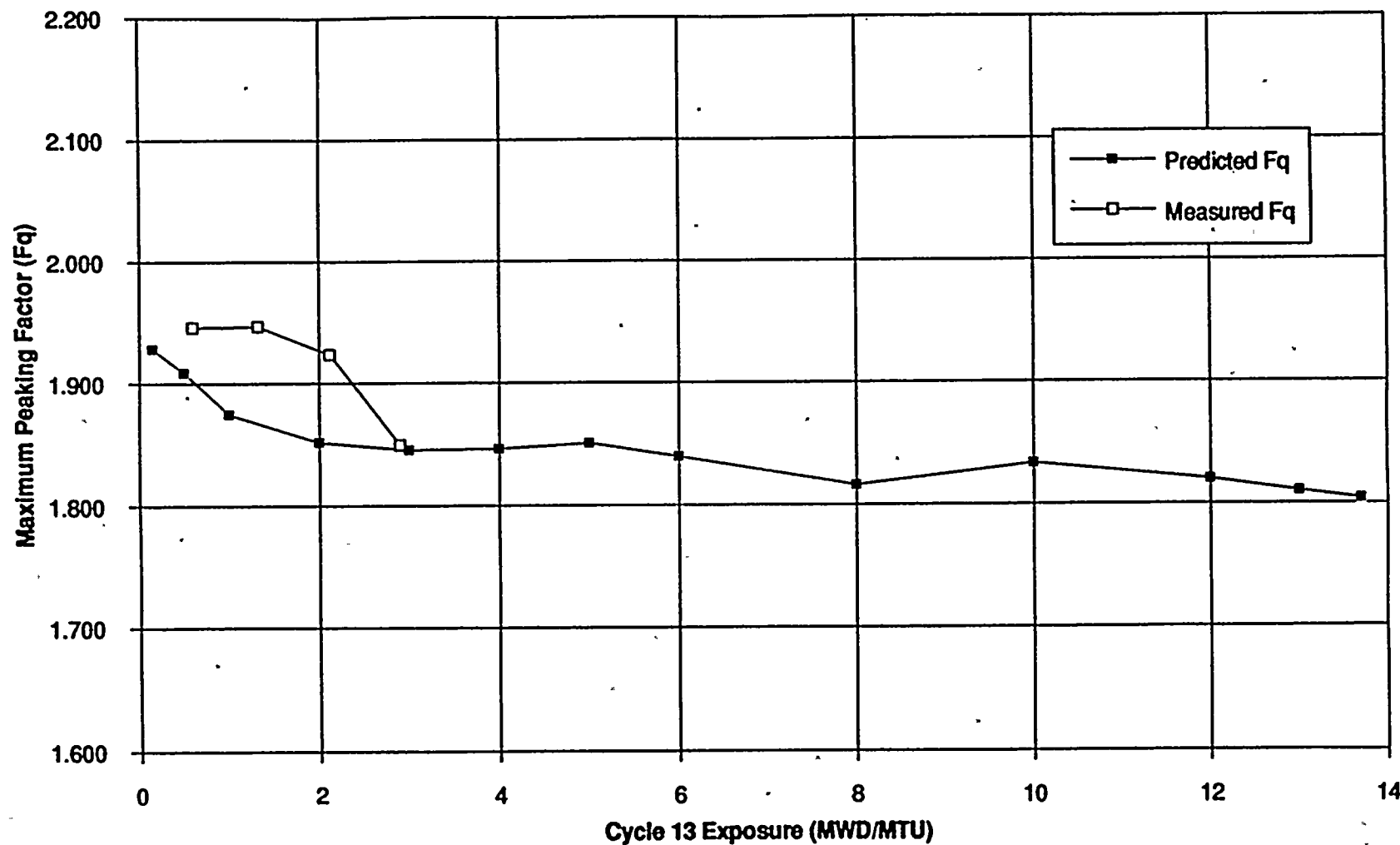
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FIGURE 2.2

Unit 3 Cycle 13 Maximum Fq (Including uncertainties)



ATTACHMENT 2

DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATION



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Dr. J.

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Determination of No Significant Hazards Consideration

Description of Proposed License Amendment

In Technical Specifications 4.2.2.1 and 4.2.2.5, a change is proposed to increase the measurement uncertainty for F_q when the number of operable incore detector thimbles are between 75% (38) and 50% (25) of the total number of detectors. The new measurement uncertainty is $[5 + 4(3-T/12.5)]\%$ where T (the number of operable incore detector thimbles), must be greater than or equal to 50% (25) of the total number of thimbles. This change is only applicable to Turkey Point Unit 3 Cycle 13.

In Technical Specifications 4.2.2.3 and 4.2.2.4, a change is proposed to increase the measurement uncertainty for U_{BL} and U_{RB} when the number of operable incore detector thimbles is between 75% (38) and 50% (25) of the total number of detectors. The new measured uncertainty is $[9 + 4(3-T/12.5)]\%$ where T (the number of operable incore detector thimbles), must be greater than or equal to 50% (25) of the total number of thimbles. This change is only applicable to Turkey Point Unit 3 Cycle 13.

In Technical Specification 4.2.3.2, a change is proposed to increase the measurement uncertainty for FAH when the number of operable incore detector thimbles are between 75% (38) and 50% (25) of the total number of detectors. The new measurement uncertainty is $[4 + 2(3-T/12.5)]\%$ where T (the number of operable incore detector thimbles), must be greater than or equal to 50% (25) of the total number of thimbles. This change is only applicable to Turkey Point Unit 3 Cycle 13.

In Technical Specification 3.3.3.2, a change is proposed to allow a decrease in the number of required operable detector thimbles to 50% (25) of the total number of thimbles consistent with an increase in peaking factor uncertainties, and to increase the minimum number of thimbles required per quadrant from two to three. This change is only applicable to Turkey Point Unit 3 Cycle 13.

Introduction

The Nuclear Regulatory Commission has provided standards for determining whether a significant hazards consideration exists (10 CFR 50.92(c)). A proposed amendment to an operating license for a facility involves no significant hazards considerations, if operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any

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accident previously evaluated; or (3) involve a significant reduction in a margin of safety. Each standard is discussed below for the proposed license amendment.

Discussion

- (1) Operation of the facility in accordance with the proposed amendment would not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed amendment allows operation with a fewer number of operable incore detector thimbles than currently permitted by the Technical Specifications. These detectors are used to monitor peaking factors; and the number of operable detectors have no impact on the probability or consequences of an accident previously evaluated. An increase in the Fq measurement uncertainty to accommodate a decrease in the number of operable detector thimbles reduces the operational margin to the Technical Specification limit of 2.32. The 2.32 Fq limit is not affected by this proposed amendment and the results of the Loss of Coolant Accident (LOCA) analyses for Turkey Point remain valid. The increase in the FAH measurement uncertainty to accommodate the decrease in operable detector thimbles reduces the operational margin to the Technical Specification limit of 1.62. The 1.62 FAH limit measurement is not affected by this proposed amendment and the results of the non-LOCA (DNBR) analyses remain valid.

An increase in the measured peaking factor uncertainties representing a reduction in the margin to the Technical Specifications limit is applied to ensure that the reduction in the number of operable detector thimbles conservatively calculates the limiting peaking factors in the core, thus ensuring that the monitoring duty of the incore detector system is met. This proposed amendment is only applicable to the current cycle (i.e., Cycle 13) for Turkey Point Unit 3 and sufficient margin exists to ensure that the Technical Specifications are not violated. The proposed amendment does not involve a significant increase in the probability of an accident previously evaluated since the proposed amendment does not change the Turkey Point Unit 3 plant design or operation of the facility as previously evaluated by the NRC.

The increase in uncertainties applied to FAH and Fq does not change the limiting peaking factors used in the UFSAR Chapter 14 safety analyses. By maintaining the Technical Specifications limits of 2.32 and 1.62 on Fq and FAH respectively, FPL can assure that the consequences to all LOCA and non-LOCA accident analyses will not change and are bound by the safety analyses for Turkey Point. Therefore, the consequences of any accident previously evaluated have not

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changed.

- (2) Operation of the facility in accordance with the proposed amendment would not create the possibility of a new or different kind of accident from any accident previously evaluated.

The operation of the facility in accordance with the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated since the proposed change will not affect plant safety analysis assumptions or the physical design of the facility. No new failure mode is introduced as a result of the reduction in the minimum required number of operable incore detector thimbles.

- (3) Operation of the facility in accordance with the proposed amendment would not involve a significant reduction in a margin of safety.

The operation and physical characteristic of the facility is unchanged by this proposed Technical Specification amendment. By increasing the measurement uncertainties with increasing number of failed detector thimbles the margin of safety is not reduced by the reduction in the number of operable detector thimbles. The increased uncertainty factors ensures that the margin of safety assumed in the Technical Specification limits of 2.32 and 1.62 on Fq and FAH is not exceeded.

Summary

Based on the above, FPL has determined that the proposed amendment request does not (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety; and therefore, the proposed amendment does not involve a significant hazards consideration as defined in 10 CFR 50.92.

